

CLAIMS

1. A rotary compressor, comprising:

a compression mechanism (20) including a cylinder (21) having a cylinder chamber (C) (C1, C2), a piston (22) accommodated in the cylinder chamber (C) (C1, C2) eccentrically with respect to the cylinder (21), and a blade (23) arranged in the cylinder chamber (C) (C1, C2) and defining the cylinder chamber (C) (C1, C2) into a first chamber (C-Hp) (C1-Hp, C2-Hp) and a second chamber (C-Lp) (C1-Lp, C2-Lp), at least one of the cylinder (21) and the piston (22) rotating eccentrically as an eccentric rotation body (21, 22);

10 a drive shaft (33) for driving the compression mechanism (20);

a pressing mechanism (60) for bringing a cylinder side end plate (26A), which is provided at one end in an axial direction of the cylinder chamber (C) (C1, C2) and faces an end face in an axial direction of the piston (22), and a piston side end plate (26B), which is provided at the other end in the axial direction of the cylinder chamber (C) (C1, C2) and faces an end face in an axial direction of the cylinder (21), close to each other in an axial direction of the drive shaft (33); and

a casing (10) for accommodating the compression mechanism (20), the drive shaft (33), and the pressing mechanism (60),

wherein the pressing mechanism (60) is eccentric away from the center of the end plate (26A, 26B) of the eccentric rotation body (21, 22), and the pressing mechanism (60) generates axial-direction pressing force of which center is eccentric away from the center of the drive shaft (33).

2. The rotary compressor of Claim 1,

25 wherein the cylinder chamber (C) is in a circular shape in section at a right angle in an axial direction, and

the piston (22) is formed of a circular piston (22) arranged in the cylinder chamber

(C).

3. The rotary compressor of Claim 1,

wherein the cylinder chamber (C1, C2) is in an annular shape in section at a right
5 angle in an axial direction, and

the piston (22) is formed of an annular piston (22) arranged in the cylinder chamber (C1, C2) and defining the cylinder chamber (C1, C2) into an outer cylinder chamber (C1) and an inner cylinder chamber (C2).

10 4. The rotary compressor of Claim 3

wherein the piston (22) is in a C-shape into which a part of an annular shape is divided,

a swing bush (27) is provided so as to be slidably held at the divided part of the piston (22), a blade groove (28) being formed therein for holding a blade (23) so as to
15 allow the blade (23) to move back and forth, and

the blade (23) is inserted in the blade groove (28) so as to extend from a wall face on an inner peripheral side to a wall face on an outer peripheral side of the annular cylinder chamber (C1, C2).

20 5. The rotary compressor of Claim 1,

wherein discharge ports (45, 46) for discharging fluid compressed in the cylinder chamber (C1, C2) to outside of the compression mechanism (20) are formed in the compression mechanism (20), and

the pressing mechanism (60) generates the axial-direction pressing force of which
25 center is eccentric to the discharge ports (45, 46) away from the center of the end plate (26A, 26B) of the eccentric rotation body (21, 22).

6. The rotary compressor of Claim 1,

wherein a support plate (17) is arranged along a face opposite a face on the cylinder chamber (C1, C2) side of the end plate (26A, 26B) of the eccentric rotation body (21, 22) in the casing (10),

5 a sealing ring (29) for defining an opposing part (61, 62) between the end plate (26A, 26B) and the support plate (17) inside and outside in a radial direction into a first opposing section (61) and a second opposing section (62) is arranged eccentrically away from the center of the eccentric rotation body (21, 22) in one of the end plate (26A, 26B) of the eccentric rotation body (21, 22) and the support plate (17), and

10 the pressing mechanism (60) allows pressure of fluid discharged outside the compression mechanism (20) to work on the first opposing section (61) in the end plate (26A, 26B).

7. The rotary compressor of Claim 6,

15 wherein the sealing ring (29) is fitted in an annular groove (17b) formed in one of the eccentric rotation body (21, 22) and the support plate (17).

8. The rotary compressor of Claim 1,

20 wherein a slit (63) is formed at a part eccentric away from the center of the eccentric rotation body (21) in a face portion opposite a face on the cylinder chamber (C1, C2) side of the end plate (26A) of the eccentric rotation body (21), and

the pressing mechanism (60) allows pressure of fluid discharged outside the compression mechanism (20) to work on the slit (63).

25 9. The rotary compressor of Claim 1,

wherein a groove (65) and a through hole (64) are formed, the groove (65) being formed in a portion eccentric away from the center of the eccentric rotation body (21) on a

face opposite a face on the cylinder chamber (C1, C2) side of the end plate (26A) of the eccentric rotation body (21) and the through hole (64) being formed in the end plate (26A) for allowing the groove (65) to communicate with the cylinder chamber (C1, C2), and

the pressing mechanism (60) introduces part of fluid compressed in the cylinder
5 chamber (C1, C2) into the groove (65) through the through hole (64) to allow the pressure of the fluid to work on the groove (65).

10. The rotary compressor of Claim 1, further comprising:

a sealing mechanism (71, 72, 73) for preventing leakage of fluid in at least one of a
10 first axial direction gap between an end face in the axial direction of the cylinder (21) and the piston side end plate (26B) and a second axial direction gap between an end face in the axial direction of the piston (22) and the cylinder side end plate (26A).

11. The rotary compressor of Claim 10,

15 wherein the sealing mechanism is a chip seal (71, 72, 73) provided at least one of the first axial direction gap and the second axial direction gap.